
Appendix E: Modem Configuration Under Windows®95 for MAT Applications

To ensure that a modem is configured correctly under Windows 95 the user must configure a modem through the modem control panel. The modem control panel will search for and detect a connected modem automatically, and then store the configuration information in the registry for other Windows applications to access.

The same is also true for MAT 5 applications, where the modem configuration information is obtained by searching the Windows 95 registry with the COM port specified in the communication profile. MAT communications software will then set up the Run-Time-Container (RTC) with the modem initialization string and communication profile settings for the application to make its connection to the Meridian 1.

However, there are a number of limitations with this process that the user must take into account when configuring the modems:

- The Windows 95 Modem control panel allows multiple modems to be configured on the same COM port.

MAT 5 software will always use the first modem found in the registry configured for the specified COM port in the communications profile. To ensure proper modem operation, only one modem/communication device should be configured on a given COM port.

- A factory modem initialization (INIT) string is stored in the Windows 95 registry. This INIT string will be used by MAT applications to set up the modem connection.

The MAT 5 communications software is written to use verbal (V1) result code. If the factory INIT string is set to use numeric (V0) result code, the “Can’t set modem parameters” error code will occur and the dial up attempt will be aborted.

To modify the factory INIT string, the user must use the registry editor (regedit) to change the factory INIT string to use verbal (V1) result code. Please see the Windows 95 documentation for detailed instructions on how to use the Registry Editor or use the instructions below.

- When searching the modem configuration information in the Windows 95 registry, the “AttachedTo” string value is used to identify which COM port is attached to the modem.

For a PCMCIA modem, this “AttachedTo” string value may not be available in the registry. As a result, no modem will be found during the search and the RTC will only contain the communication profile settings. To correct this problem, the user must use the registry editor (regedit) to add this “AttachedTo” string value of the COM port configured for the PCMCIA modem. Please see the Windows 95 documentation for detailed instructions on how to use the Registry Editor or use the instructions below.

High Speed Smart Modem Configuration Consideration

As modem technology progresses, the new generation of high speed modems provide additional functionality to achieve the highest possible connection rate. These high speed smart modems use various tones during the handshaking period to negotiate the speed and protocol.

An area needing extra attention is the modem configured on the Meridian 1 SDI port. In most cases, the modem attached to the M1 SDI port is configured to run in dumb mode at the same speed the M1 SDI port is configured for (@ 9600bps or less). This locks the modem into a specific mode of operation to prevent the modem being run in command mode (echo input) or connecting at a different baudrate than the M1 SDI port is configured for.

When a high speed smart modem is used on the MAT 5 PC to dial up the M1 modem, the PC modem will always attempt to connect at its highest possible speed. The switch modem, however, can only connect at the configured speed. So, during the modem on-line handshaking period, the PC modem will send out different tones to negotiate the speed and protocol, and the switch modem will connect at its configured speed and ignore additional attempts. Once the switch modem is connected, any additional handshaking tones sent by PC modem get translated into data (garbage under this condition) and forwarded to M1 SDI port. These garbage characters may eventually lock up the M1 SDI port. The two modems may still connected, but access to the M1 overlay input is no longer possible.

To avoid this type of problem, the key is to maintain modem compatibility. Here are some recommended steps to avoid potential problems and increase the connection success rate.

- The PC modem should be configured to match the switch modem's settings.
- The speed between the M1 SDI port and switch modem is locked to the M1 SDI port's baudrate if a high speed modem is installed on M1 SDI port.
- To minimize the garbage characters after carrier detect or carrier lost situations, set your modem S9 register to a higher value (for example, 30 = 3 seconds) and S10 register to a lower value (for example, 7 = 7/10 of a second). Note: when increasing the value of S9 register, you may need to do some timing adjustments on some of the modem/buffer equipment scripts.

Troubleshooting Modem Connections

Modem does not dial

- Verify that your modem is configured to be on the correct COM port on the Control Panel, Modems, Properties, Communications property sheet.

You can test the COM port to which your modem is connected by launching Hyperterminal (under

Start/Programs/Accessories/Hyperterminal). Hyperterminal prompts you for a connection name and presents you with the phone number property sheet. In the Connect Using drop down list box, select **Direct to COM X**, where X is the COM port to which your modem is connected. Once you are in the terminal, you should be able to type the command **AT** and see the “OK” response back from the modem.

- If your modem does not respond, you may be using the wrong COM port. Go to the File/Properties menu and select **Direct to COM Y**, where Y is a different COM port. Once you have located the correct COM port, go back to MAT Navigator and bring up the properties for the system to which you are trying to connect. Click on the communication tab and select PPP or Serial from the communication profile list. Verify that the COM port you selected for this profile is the COM port that you located your modem on using Hyperterminal. Verify that the baud rate matches the settings for the M1 port into which you will dial.
- If the modem still does not dial, follow the steps above to establish a Hyperterminal connection. After issuing the **AT** command and receiving the “OK” prompt, issue the command **ATDT1234567**, where 1234567 is the phone number for the modem connected to the M1. If you do not hear the modem dialing and connecting at this point, verify that your phone line and modem cables are correctly connected. If the modem dials and connects, verify that you have dial-up-networking installed along with a dial-up-adaptor. See “Configuring PC PPP Communications” on page 27”.

Modem dials and connects but the connection details button reveals that scripting failed while waiting for a prompt

- Verify that the baud rate configured for the TTY on the switch matches the baud rate configured for the modem in the Navigator/System Properties/Communication property sheet/PPP or Serial profile for the system to which you wish to connect. Make sure that the data bits, stop bits, and parity match as well.

Modem dials but does not connect

- Verify that the phone number you are dialing is not busy.
- Verify that you have included all necessary digits in the phone number. Check in Navigator/System Properties/Communication property sheet/PPP or Serial profile for the system to which you wish to connect.

Modem dials and connects and the scripting is completed successfully, but the Connection Details button reveals that the session failed

- Verify that the IP address that you assigned to the local PPP interface on the M1 is the same as the IP address you entered in the address field on the Navigator/System Properties/Communication property sheet/PPP profile for the system to which you wish to connect.
- If possible, verify that you can make an Ethernet connection to the same switch.

After establishing a PPP connection, but before canceling from the connection dialog: Open a DOS command prompt (**Start/Programs/MS-DOS Prompt**) and run the ping command by typing **ping 47.1.1.10** where 47.1.1.10 is the M1's local IP address in this examples (see "Configuring Ethernet and PPP at the Meridian 1"). Verify that the data lights on your modem flash as the ping data is sent to the Meridian 1. If you do not receive a response from the M1, verify that the IP address that you assigned to the local PPP interface on the M1 is the same as the IP address you entered in the address field on the Navigator/System Properties/Communication property sheet/PPP profile for the system to which you wish to connect.

***Modem dials and connects but you receive the error message
“Error writing to COM port” or “Error reading from COM port”.***

- Verify that the modem you installed in the Control Panel matches your modem type. Remove your installed modem driver and install a generic modem driver in its place.

From the Control Panel/Modems, click the **Remove** button to remove your modem from the installed list. Click **Add** (to add a new modem driver). Click the check box that says “Don’t detect my modem; I will select it from a list” and then click **Next** to move to the next step. Select the standard modem driver matching your modem’s baud rate (for example, Standard 14400 bps Modem) and click **Next** to move to the next step. Select the COM port to which your modem is connected, and click Next. Click **Finish** to complete the modem installation. Restart the system, and try to establish a PPP or Serial connection.